urban ecology
applied to the city of Rome

Edited by
MIRILIA BONNES

University of Rome "La Sapienza"

Progress Report N.3

reduced english version

1987
To Valerio Giacomini who initiated the UNESCO-MAB Programme on the city of Rome and who succeeded in transmitting his enthusiasm and drive, giving us the impetus to go on.
CONTENTS

Preface ................................................................. 7
Contributors .......................................................... 9

INTRODUCTION

1 "OBJECTIVE" AND SUBJECTIVE ENVIRONMENT: TOWARD AN ECOLOGICAL APPROACH.
   M. Bonnes .................................................... 13

PART I: "TYPE ONE" STUDIES: THE WHOLE CITY

2 HUMAN TOPOONYMY: CHARACTERISTICS AND HISTORICAL DEVELOPMENT
   C. Bagnasco .................................................. 19

3 INHABITANTS KNOWLEDGE AND PREFERENCES CONCERNING THE QUARTERS OF ROME
   M. Bonnes, F. Paola, B.M. Poggiali ........................................... 23

4 THE SOCIAL REPRESENTATION OF THE CENTRE OF ROME: A STUDY ON THE YOUNG INHABITANTS AND THEIR PARENTS
   L. Giuliano .................................................. 27

5 REPRESENTATION OF THE ROMAN URBAN ENVIRONMENT THROUGH THE DRAWINGS OF CHILDREN WITH DIFFERENT RESIDENTIAL EXPERIENCE OF THE CITY
   M. Bonnes, G. Rullo .......................................... 31

6 FLORISTICAL INVENTORY OF THE METROPOLITAN AREA OF ROME
   A. Menichetti, Paolo Petrella, Sandro Pignatti .................................. 35

7 LICHENS IN THE ROME URBAN AREA
   P. Nimis, Mauro Tretiach ........................................... 39

8 CHEMICAL POLLUTION OF THE URBAN ENVIRONMENT AND THE ASSESSMENT OF ENVIRONMENTAL RISK
   C. Jacobelli, F. Massucca, C. Lanzara, P. Salonia .............................. 43

PART II: "TYPE TWO" STUDIES: THE "SAMPLE-AREA"

9 TOWN PLANNING ASPECTS AND QUALITY OF THE ENVIRONMENT.
   A STUDY OF THE SAMPLE AREA
   C. Bagnasco, G. Bizzi, B.F. Lapadula ........................................... 49

10 MANAGEMENT AND CONTROL OF THE ENVIRONMENTAL RESOURCES:
   METHODOLOGICAL PERSPECTIVES AND POSSIBLE APPLICATIONS IN THE SAMPLE AREA
   R. Colantonio Venturelli ........................................... 55
11 QUARTER, CENTRE, PERIPHERY IN THE CITY OF ROME: FROM THE INHABITANTS' COGNITIONS TO THE "SOCIAL IMAGEABILITY" OF URBAN PLACES
M. Bonnes, G. Secchiaroli, G. Rullo

12 THE QUARTER OF RESIDENCE, THE CENTRE AND THE PERIPHERY IN THE REPRESENTATIONS OF YOUNG RESIDENTS IN VARIOUS QUARTERS OF ROME
F. Amoni, M. Bonnes, M.V. Giuliani

13 ENVIRONMENTAL COMMUNICATION AND COGNITION OF THE URBAN ENVIRONMENT: A PROPOSAL FOR INTEGRATED RESEARCH ON THE URBAN ENVIRONMENT
E. Monzeglio, M. Bonnes

PART III: "TYPE THREE" STUDIES: THE "SPECIFIC PROBLEMS"

14 A CROSS-CULTURAL STUDY OF REPRESENTATIONS OF THE URBAN ENVIRONMENT
M. Bonnes, D. Jodelet, Leneis Kruse, P. Stringer

15 PROJECT-STUDY OF THE PLANT COVER IN THE ARCHAEOLOGICAL AREAS OF ROME
E. Pignatti

16 DOCUMENTATION PROBLEMS CONCERNING THE ENVIRONMENT. SOME ISSUES RELATED TO THE ESTABLISHMENT OF A CENTER FOR DOCUMENTATION, INFORMATION AND EDUCATION ON ENVIRONMENTAL CONCERNS IN THE CITY
B.F. Lapadula

PART IV: INVOLVEMENT OF MAB-ROME PROJECT IN SCIENTIFIC EVENTS
Preface

The aim of this volume is to present part of the work carried out during these years, within the UNESCO Programme of Ecological Sciences, named Man and Biosphere (MAB) n. 11, on the city of Rome, after the 1981. In this year, after the sudden demise of the founder of this Rome-Project the ecologist Valerio Giacomini, the previous Progress Report on the Project (MAB-Rome Project Report n. 2, September 1981) was published, in order to present the Project at the UNESCO Conference Exhibition held in Paris, on September 1981 to celebrate the 10 years of the General MAB Programme.

In the present volume the general philosophy of the MAB-Rome Project, is the same as that presented in the previous Reports, although the attention is concentrated on the problem of environmental perception and of its implications for the study and management of the environment, as illustrated in the first introductive chapter of this volume. Environmental perception is considered in the UNESCO-MAB Programmes of Ecological Sciences as one the three main "dimensions", with the space-dimension, and the time-dimension, of every "human-use system".

In this volume, the introduction sets out the principal theoretical and methodological aspects according to which the actual work is oriented. Then various research contributions follow, according to the methodological plan previously illustrated. These contributions are original research reports or projects presenting part of the work already carried out or programmed by some of the main working groups currently engaged on the Programme.

There is still a lot of work to be done in order to achieve the "integrated" "knowledge-action" about the environment, which remains the final objective of every MAB-Project. Nevertheless some important steps in this direction seem to have been accomplished, first of all the readiness or willingness displayed by each marking group to work with the other groups: the aim of this publication is also to attest to this willingness.

I am very grateful to my colleagues of the Institute of Psychology of the Italian National Research Council for their help on the realization of this publication. In particular special thanks to Letizia Properzi for her patient work of typing and arranging of the two versions of this volume and to Luigi Giustiniani for the work about the figures and the reproduction of the integral version of this volume. Finally I am very grateful to my colleague Vittoria Giuliani for her support and help on the realization of this publication.

Mirilia Bonnes

Rome, March 1987
In order to facilitate the diffusion of the present volume at the international level, two versions of it have been published: a first complete version in Italian and a second reduced version in English, which includes for each contribution only the contents, the summary and the bibliographical references.

The two publications have been funded by UNESCO Research Contract n. SC/RP 204204.5, to M. Bonnes at the Department of Psychology of Processes of Development and Socialization of the University of Rome "La Sapienza" and by the Institute of Psychology of the Italian National Council (C.N.R.).
CONTRIBUTORS

ENVIRONMENTAL PERCEPTION

Mirilia Bonnes (Coordinator)
Department of Psychology of Processes of Development and Socialization,
University of Rome "La Sapienza",
Via degli Apuli, 8 - 00185 Roma - Italy

Flora Amoni
Ministry of Public Education, Rome, Italy

Maria Vittoria Giuliani
Institute of Psychology National Research Council (C.N.R.), Rome, Italy

Luca Giuliano
Interdisciplinary Group for Social Research, University of Rome "La Sapienza",
Rome, Italy

Lenelis Kruse
Department of Psychology, University of Hagen, Hagen, FRD

Denise Jodelet
Ecole des Hautes Etudes en Sciences Sociales, Paris, France

Elide Monzeglio
Faculty of Architecture and Urban Planning, University of S.Paulo, S.Paulo, Brazil

Francesco Paola
Department of Psychology of Processes of Development and Socialization,
University of Rome "La Sapienza", Rome, Italy

Bianca Maria Poggioli
Department of Psychology of Processes of Development and Socialization,
University of Rome "La Sapienza", Rome, Italy

Giuseppina Rullo
Institute of Psychology, National Research Council (C.N.R.), Rome, Italy

Gianfranco Secchiaroli
Department of Sociology, University of Bologna, Bologna, Italy

Peter Stringer
Policy Research Institute Queen's University, Belfast, United Kingdom
URBAN PLANNING

Carlo Bagnasco (Coordinator)
Department of Territorial and Urban Planning, University of Rome,
Via Cassia, 34 - 00191 Roma - Italy

Bruno Filippo Lapadula (Coordinator)
University of Cassino
Via dell'Oca - 00186 Roma - Italy

Giuliano Bizzzi
Department for Special Aid to Southern Italy, Rome, Italy

Rita Colantonio Venturelli
Department of Territorial Planning University of Ancona, Ancona, Italy

URBAN GREEN

Sandro Pignatti (Coordinator)
Department of Plant Biology, University of Rome "La Sapienza",
Piazzale Aldo Moro - 00185 Roma - Italy

Agnese Menichetti
Department of Plant Biology, University of Rome "La Sapienza", Rome, Italy

Pier Luigi Nimis
Department of Biology, University of Trieste, Trieste, Italy

Paolo Petrella
Department of Plant Biology, University of Rome "La Sapienza", Rome, Italy

Erika Pignatti
Department of Biology, University of Trieste, Trieste, Italy

Mauro Tretiach
Department of Biology, University of Trieste, Trieste, Italy

CHEMICAL POLLUTION

Carla Jacobelli (Coordinator)
Institute of Biomedical Tecnologies of National Research Council (C.N.R.),
Via Morgagni, 30/e - 00161 Roma - Italy

Carmine Lanzara
Ministry of Defence, Rome, Italy

Franco Mazzucca
Institute of Biomedical Tecnologies of National Research Council (C.N.R.),
Rome, Italy

Paolo Salonia
Institute of Territorial Planning and Management of National Research Council
(C.N.R.), Naples, Italy
1. "OBJECTIVE" AND SUBJECTIVE ENVIRONMENT: TOWARD AN ECOLOGICAL APPROACH.

Integrated studies of environmental perception of the
UNESCO-MAB-Rome-Project

Mirilia Bonnes
Department of Psychology of Processes of Development and Socialization, University of Rome "La Sapienza" and Institute of Psychology, C.N.R., Rome

CONTENTS

1. Theoretical background
2. Methodological aspects
   Figures
   Summary
   References
SUMMARY

1. Theoretical background

Our understanding of human behaviour in and towards the environment seems to depend on an increasing extent on the study of environmental perception, i.e., of internal processes of "subjectivization" or "representation" of the environment, which are believed to mediate the effects of the physico-environmental aspects on the individual and to govern and direct the action of human behaviour itself towards the environment.

The model proposed in this connection by cognitive psychology (Neisser, 1976) may be taken as a reference point for the purpose of illustrating each process of "representation - action", acting on and within the environment. This model applies not only to those processes occurring in the individual users of this environment, but also to those processes begun by possible specialist sectors dealing with studies - actions on the environment.

Each process of specialist representation - action acting on the environment tends to carve particular "sub-environments" out of the "total environment". These sub-environments tend to remain separate both from each other and from the representation - action systems adopted by the users.

Increasing the number of these specialist representation - action, without making any effort to compare and integrate them with those present among the users, leads to the risk of over-subdividing the "total environment", which is the only suitable reference environment for understanding the users' processes of representation - action.

Our studies in recent years of the way users perceive the environment have shown how important it is to extend the analysis to take in an ecological conception which allows perceptual-environmental data to be "contextualized" as far as possible with reference to the specificity of the factors involved in which perception takes place (Bonnes, 1980; Bonnes, Secchiaroli, 1983).

Our current study in the field of environmental perception, within the UNESCO Man and Biosphere Programme (MAB) n.11 is based on the same ecological conception. It is also focussed on the consideration of a particularly complex environmental situation, i.e., the city of Rome, and is being carried out using a multi-disciplinary methodology (Bonnes, Secchiaroli, 1981; Secchiaroli, Bonnes, 1983).

On the whole, this study has three main aims: 1) to achieve an integrated approach to the study of the Rome ecosystem, 2) to gain further insight into the psychological process by which people "perceive" their urban environment and, 3) to study how these psychological representations of the environment are related to the representation systems used in other specialist fields to define this urban environment.

The final objectives of the work consist in promoting a higher degree of integration of the various representation-action systems related to the environment, and thus of our knowledge of environmental problems, as well as of stressing the need for every specialist representation-action process concerning the environment to take into account also the processes of representation - action occurring in the users of these environments.
2. Methodological aspects

In order to attain this integrated knowledge of the Rome urban system, various working groups from very different origins and disciplinary backgrounds are participating in the study. Each working group has been formed on the basis of a specific disciplinary or professional skill, which is used to study the urban system: urban planning, architectural considerations, green areas, chemical and noise pollution and environmental perception are the topics of the main working groups currently participating in the project.

The collaboration and integration between the different working groups is attained through a specific working methodology which requires three principal types of contribution from each group. This contribution is known as "type one" when each group studies the city from a general point of view in order to form a body of knowledge of the whole system which is common to all groups.

In "type two" studies the groups work together in the same specific, prescribed and fairly typical city area, known as the "sample area". One such area starts from the city center and runs in a northwest direction out into the country. In this sample area, the attention of the various working groups is focussed on those aspects of the environment that affect the quality of life of the inhabitants.

The "type three" studies consist of specific problem-oriented studies focussed on some specific city aspect deemed particularly relevant to a group's field of competence and inquiry.

The papers collected in the present volume have been grouped according to this type of approach and are intended to illustrate part of the work done, in progress or planned for the future, concerning the city of Rome, within the framework of the UNESCO MAB 11 Programme.

REFERENCES


PART I

"TYPE ONE" STUDIES:

THE WHOLE CITY
2. ROMAN TOponyMY: CHARACTERISTICS AND HISTORICAL DEVELOPMENT

Carlo Bagnasco
Department of Territorial and Urban Planning, University of Rome "La Sapienza"

CONTENTS

1. The administrative subdivision of the roman territory
2. The "Rioni"
3. The urban growth after the national union: "Quartieri", "Suburbi" and "Zone dell'Agro"
4. The "Circoscrizioni"
5. Relationships between urban form and administrative subdivision

Figures
Summary
References
This study analyses, within a historical, urbanistic and functional frame of reference, the toponymic and administrative subdivisions of the Roman territory and the historically determined relationship between these and urban form.

The territory of the Municipality of Rome is divided into "toponymic subdivisions", which are, above all, of value as points of reference for statistical data and for census taking. At present there are 122, made up of 22 "Rioni", 32 "Quartieri urbani", 3 "Quartieri marinii", 6 "Suburbi" and 59 "Zone di Agro Romano".

This variegated toponymic subdivision has its roots in the very history of Rome and has been given shape over time by events which took place during the city's urbanistic, demographic and politico-administrative development.

In fact the "rioni" correspond largely to the historical city which developed over the centuries within the perimeter of the ancient walls built by the Emperor Aurelian in the 3rd century A.D. and which, with a surface area of about 1,500 hectares, makes up one of the largest historical centres in the world.

The origins of the "rioni" are very ancient, going back to the subdivision of ancient Rome into 14 "regiones" established by the Emperor Augustus, probably in 7 B.C.. At this time Rome was about to reach the height of her power and her maximum demographic and constructional development. The subdivision described two concentric circles around the Palatine, of 7 "regiones" each, 18 on the inner bank of the Tiber and one (Trastevere) on the other.

This subdivision remained in use throughout the Empire and even long after its fall so that it formed the basis of the later medieval subdivisions in 12 "rioni" (the name deriving directly from "regioni") of Cis-Tiberian Rome, lying in the plain between the Tiber and the Aventine, Palatine, Capitoline and Quirinal hills. The "rioni" reflected the feudal subdivision of the city, forming islands within the network of main roads and grouped together, for reasons of livelihood and protection in the frequent disputes, around the fortified mansions of the patrician families. In the 14th and 16th centuries Trastevere and the "Borghi" on the other side of the Tiber, previously under separate ecclesiastical jurisdiction, were also united administratively to the Cis-Tiberian city, thus creating another two "rioni".

The division into 14 "rioni" remained unaltered up to the unification of Italy. In 1921 the parts inside the walled city, close to the walls, of more recent development, were separated from the "rioni" in which they were included in order to form new "rioni". Thus the 22 present day "rioni" were created, three of them on the other side of the Tiber.

The "quartieri", with the peripheral addition of the "Suburbi", originally including the transitional zones between the city and the country but now also densely urbanized, include instead the large modern urban expansion which has grown up outside the Aurelian walls - which had constituted the extreme limit of the city for 2000 years - in the last hundred years, since Rome was proclaimed capital of Italy. This triggered off a sudden migration to the town which was to transform Rome into a metropolis with nearly three million inhabitants.

Continuing urban growth has forced the municipality to repeatedly adjust the toponymic subdivision. In 1911 the areas built outside the walls were subdivided into 15 "quartieri". In 1926, 11 "Suburbi" were defined, which lay much further out with respect to the historical "Suburbio". In 1961, after various successive extensions of the territory of the "quartieri" and the "Suburbi", the subdivision in force today was adopted.

Finally the "Zone dell’Agro Romano" are the more external parts of the municipal territory and, except for some parts now invaded by the urban outskirts, they have remained largely agricultural.

Another subdivision of the municipal territory into 20 "Circoscrizioni" is added to the
toponymic subdivision. These are not simply territorial areas but actually represent a level of local government with an elected local council to which certain deliberative and consultative powers have been delegated by the central municipal administration. The first "Circoscrizione" includes the historic Cis-Tiberian centre between the walls and the "rione" of Trastevere. Around this a group of 5 "Circoscrizioni", including the oldest areas, have grown up concentrically, together with an outer ring of 12 "Circoscrizioni", which subdivide the territory into segments up to the municipal limits. Two more "Circoscrizioni" are outside the city, dividing the coastal belt.

The different historical and urbanistic origins of the various parts of the city (historical centre, "quartieri", "borgate", etc.) have given them very different characteristics and at the same time conditioned the development of the variegated toponymic and administrative subdivision of the territory. This is, in fact, the historical product of continual adjustments to the incessant transformation of the urban shape of the city.

This transformation, in the historical centre, developed very slowly and has thus allowed for a greater and now stable adjustment of the toponymic subdivisions to the urban form of the centre itself. This -beyond its internal division into zones of different epochs and features -appears as an aggregate with a precise identity, coinciding roughly with the complex of "rioni" and can be clearly distinguished from the rest of the city because of its clearly defined boundaries, the typological and stylistic features of its historical architecture, its peculiar role as politico-administrative centre, as centre of business and commerce for the whole city and, for some functions, for the whole nation.

The coincidence between the urban form (which is, then, both "structure" and also "image" of the city) and the toponymic subdivisions seems much less, as well as often casual and still unstable, in the areas outside the urban walls. Here the continual and rapid changes in the city structure, resulting from the sudden recent expansion, have now rendered obsolete the present subdivisions which are still modelled on the urban form of the city as it existed in 1961. The present distinction between "Suburbi" and "Quartieri" no longer has any real basis because the "Suburbi" are now almost completely built like the "Quartieri". Besides this, many main roads, along which are the limits between the "Quartieri", have become important commercial axes, places of attraction and integration rather than of separation between adjacent areas. In the same toponymic area, then, heterogeneous settlement typologies have often grown up. In only a few areas with a strong urban, stylistic and functional identity is this identity reflected in the toponymic subdivision. Many areas of the "Agro Romano" have also been invaded by the advancing suburbs or by seaside residential and touristic developments, thus losing their original agricultural connotation.

The Council is planning a revision of the toponymic structure to bring it closer to the present-day urban picture, incorporating the areas of the "Agro Romano" and of the coast which are now urbanized, into the "Quartieri".

Similar considerations apply to the delimitations of the "Circoscrizioni". In fact the first "Circoscrizione", including the historical Cis-Tiberian centre and Trastevere, is the only one with a well-defined identity which is related to factors of history, style and "image" as well as having clear boundaries. The other "Circoscrizioni" do not have boundaries or features (morphological, architectural, etc.) giving them a clear identity in the continuity of the urban fabric of recent construction. This is especially true of those on the outer ring which have no naturally marked boundaries and which are so heterogeneous as to include at the same time consolidated "quartieri", "borgate", industrial and agricultural zones.
REFERENCES


Enciclopedia Italiana di scienze, lettere ed arti "Treccani", Voce "Roma", vol. XXIX.


3. INHABITANTS KNOWLEDGE AND PREFERENCES

CONCERNING THE QUARTERS OF ROME

Mirilla Bonnes
Department of Psychology of Processes of Development and Socialization,
University of Rome "La Sapienza" and Institute of Psychology, C.N.R., Rome

Francesco Paola, Bianca Maria Poggiali
Department of Psychology of Processes of Development and Socialization,
University of Rome "La Sapienza"

CONTENTS

1. Research hypotheses and aims
2. Method
3. Results and Discussion
   3.1. Knowledge of the Roman 'Quartieri' (quarters)
   3.2. Knowledge and location of one's own quarter
   3.3. Knowledge of the "Circostrizioni" (districts)
   3.4. Preference expressed as regards the various quarters
4. Conclusions
   Tables, Figures
   Summary
   References
Every urban environment, especially a large one like Rome, has a certain toponymic subdivision which, in some cases, acts as a fundamental reference point in the inhabitants' sense of orientation within the city - as has been shown for the city of Paris (Milgram, Jodelet, 1976). Taking this into consideration, the present study aims at establishing in what way the inhabitants' image of the Rome urban environment is based on the toponymic subdivision in its present form of quarters ('quartieri') and districts ('circoscrizioni'). In particular we try to ascertain: 1) to what extent the inhabitants' knowledge about the various quarters of the city is correct regarding: a) number of quarters; b) their names; c) their location. 2) how the experience (real or imaginary) of living in the city affects their emotional orientation (i.e. positively or negatively) to the various quarters and 3) how correct their knowledge is regarding the number of districts.

Finally we try to establish if the kind of knowledge and affective orientations investigated vary according to sex and to the length of residence in the city - as the results of various studies on urban cognitions would suggest: Francescato, Mebane, 1973; Milgram, Jodelet, 1976; Honnes, Seecharil, 1982, 1983.

The study was carried out on a sample of 200 inhabitants of Rome, differentiated according to sex and to length of residence in the city: less than 3 years, more than 10 years or native to Rome, residents in different areas of the city.

Overall the results obtained reveal how the inhabitants' image of the city of Rome is barely related to the official toponymy of the quarters and districts.

Above all, the inhabitants' knowledge is incorrect and confused; this is true also of their knowledge of the names and the location in space of their own quarters. On the other hand, it turns out that they more often call the areas by incorrect place names which thus tend to replace the official ones.

In each case the inhabitants' mental image of the city toponomy seems far more precise as regards names, whether correct or incorrect, than in recalling where places actually are. The inhabitants' capacity to correctly locate, on a blank map of the city, the names of the quarters and of the zones which they could remember verbally, was very poor. Short-term residents and women found this more difficult than long-term residents and men.

Overall, the quarters, correctly or incorrectly named, which were most easily recalled by the inhabitants were EUR (actually a quarter) and Trastevere (which is not a quarter but a "rione").

These areas and the Centre in general, along with about ten quarters and zones, are those in which the inhabitants would most like to live.

The areas least preferred, on the other hand, cover the whole urban area and particularly the outlying quarters and the Centre in general.

From the residential point of view, there are far more areas in Rome considered "undesirable" than "desirable". "Undesirable" areas mostly correspond to the outskirts, "desirable" ones to the central zone.

However this centre(outskirts dimension only seems to explain the inhabitants' residential preferences in part since the Centre is included both on the map of "desirable Rome" and on that of "undesirable Rome". Similarly, EUR, considered highly desirable, is quite clearly a quarter on the outskirts.

It should also be noted that nearly a quarter of the respondents preferred the quarter in which they lived.

Probably, along with its centre(outskirts dimension, the "social imageability" (Stokols, 1978) of the quarter, i.e. its capacity to take on a precise and collectively shared "urban image", which makes it recognizable from the rest of the city, plays an important part in whether it is included in the map of the "desirable" residential part of the city.
This seems particularly true of the quarters of EUR, Trastevere and the centre in general which are also amongst those parts of the city the inhabitants recalled more readily and were most familiar with.

The connections between the quarters' "urban imageability" and the inhabitants' relative residential preferences is still to be studied in greater depth, taking into consideration precisely what our data show. That is, of the urban areas with an apparently stronger imageability - in that the inhabitants recall or know them or express preferences about them -some are much sought after after exclusively from the residential point of view, as happens, for example, with Trastevere, while other areas may be considered highly desirable by some and highly undesirable by others, as happens particularly in the case of EUR and the centre.

It thus remains to be seen if such an apparent contradiction in the way some parts of the city are perceived as regards residential preferences, is due more to the existence of different types of inhabitants who attribute to it a positive or negative image, or rather because of the high complexity and basic ambivalence in the way urban imageability or "social representations" of urban places (Moscovici, 1961,1984; Milgram, 1984) are built up by the inhabitants.

REFERENCES


CONTENTS

1. Introduction
2. Theoretical foreword on the concept of social representation
3. Method
4. Subjects
5. Spatial localization of the Centre
6. Reasons for and frequency of visits to the Centre
7. Conclusions
   Tables, Figures
   Summary
   References
SUMMARY

Faced with the increasing complexity of urban areas, the average big city dweller will tend to work out his own strategy for getting to grips with his environment and interpreting it. The city centre, with its peculiar power of attraction, becomes an object for social representation (Moscovici, 1961; Herzlich, 1969; Chombard de Lauwe, 1963, 1971; Palmonari, 1980), and the "public" aspect of a city depends mainly on this (Ledrut, 1969; Giudicini, 1978, 1981).

With its large historic centre, Rome takes on a variety of symbolic functions and images, and these make an analysis of the identity of the city centre and its several kinds of significance particularly interesting (Bianchi, Perussia, 1978, 1980; Bonnes, Socchiarioli, 1979, 1982, 1983). Our research involved a sample of young inhabitants and their parents (412 subjects, 176 males and 236 females, equally divided between parents and children).

The social representation of the city centre was surveyed along the following lines:

A. Spatial localisation, on a map of the city divided into 120 sectors.

B. Reasons for and frequency of visits to the centre, by means of 18 items involving various approaches to the use of it.

C. Connotative meanings, through 14 scales of semantic differentials and a list of adjectives, drawn from the list of adjectives for the description of feelings associated with the environment (Russel and Pratt, 1980).

The answers subjects gave to the 18 items on the use of the city centre were subjected to factor analysis (the Varimax procedure), and the following factors emerged: i) "acquisitiveness", or use in terms of the purchase of consumer goods; ii) "escape, with the purpose of observation", being a form of relaxation, possibly preparatory to a purchase; iii) "escape, with the purpose of socialising", aiming at human contact; iv) "commitment", with cultural or political aims; v) "non-discretionary", the use being independent of the will of the user.

The social representation of the city centre turned out to be strongly influenced by the kinds of experience the subjects have of the urban environment. As far as spatial localisation is concerned, a stereotype centre emerged, represented by the main architectural symbols of the political centre (the Government buildings, Parliament). At the same time, there are more extensive, subjective areas, and considerable differences in sex and generation emerged in these cases.

The young showed a greater interest in the socialising uses. However, the most characteristic "functional dimension" of the city centre turned out to be "escape, with the purpose of observation", mainly in the form of "looking on", and only superficially associated with feelings of integration and participation in the urban environment. Analysis of the relation between the uses of the centre and its connotative meanings showed considerable degrees of exclusion or marginal participation, although the subjects tended, on the whole, to reveal positive connotations.

Activities connected with a more constructive use of the centre and a real exercise of choice, which we grouped together under the label of "commitment", did not appear to play a very significant part.

The city centre has, therefore, assumed a primarily commercial connotation, with a superficial political identity superimposed on it. The resulting social representation is rather meagre for a city like Rome, for which one would have expected a more significant historical and cultural dimension.
REFERENCES


HERLICH C., Santé et maladie, Analyse d'une représentation sociale, Paris:Mouton, 1969


5. REPRESENTATION OF THE ROMAN URBAN ENVIRONMENT THROUGH THE DRAWINGS
OF CHILDREN WITH DIFFERENT RESIDENTIAL EXPERIENCE OF THE CITY

Mirilia Bonnes
Department of Psychology of Processes of Development and Socialization,
University of Rome "La Sapienza" and Institute of Psychology, C.N.R., Rome

Giuseppina Rullo
Institute of Psychology, C.N.R., Rome

CONTENTS

1. Introduction
2. Aim of Research
3. Method
4. Results and discussion
   4.1. Representations of the urban environment by subjects of different sex
   4.2. Representations of the quarter of residence and the whole city
   4.3. Representations of the urban environment by inhabitants of the city and of
         the "borgata".
5. Conclusions

Tables, Figures
Summary
References
SUMMARY

The following is an account of research concerning the representations that 9- to 10-year-old children have of the urban environment of Rome. The study of these representations was carried out through an analysis of the children's drawings. The aim was to ascertain whether and, if so, how different types of residential experience in the city can influence the cognitive representations inhabitants of this age form both of their own residential quarter and of the whole city.

In particular, we wished to ascertain whether the difference between living in an almost central part of the city (semi-central quarter) or in outskirts with such peculiar features as are shown by those mainly illegal, typical Roman settlements known as "borgate" was significantly reflected in ways environmental urban representations are structured. Account was taken of the different sexes of the subjects and of differences in the environments represented, such as the whole city and the quarter of residence.

Analysis was carried out on the graphic symbolizations of their own quarters and of the whole city provided by two samples (80 subjects) of Roman children (of 9 to 10) living respectively in a "borgata" (Vill'Alba) and in a city quarter (Trieste district). The contents of these representations were analyzed at the level of "major elements" and "details" in terms of the various categories of symbolized elements. Particular attention was paid to elements of the "built environment", such as "structures" (blocks, buildings) and "pathways" (streets, roads, squares), as well as to such elements of the "non-built environment" as "people" and "natural and animal context".

The findings show that the representations inhabitants of this age have of their own urban environment are greatly influenced by the type of urban experience they have in these environments. In particular, the fact of living in a relatively marginal environment lacking in facilities like the "borgata" or in a city district seems to be related to the very different contents of the representations, and this applies both to the quarter of residence and to the city as a whole.

The built and non-built environments tend to assume different degrees of importance in representations of the various urban environments for the different types of inhabitants.

On the one hand, the differences between the two residential environments considered (city quarter and borgata) can in part account for the greater importance the borgata dwellers give to built-up elements (blocks and buildings) in representations of their own quarters, while city dwellers attach more importance to the non-built-up elements, and to the natural context in particular (there is, in fact, more objective evidence of this in the city quarter we considered).

Nevertheless, the differences found in the two groups of subjects, and in their representations of the whole city, suggest that objective differences in the respective environments of residence can create a subjective difference in the users of these environments, to the extent that the urban environment of the city of Rome itself becomes something rather different for the two different groups of inhabitants. The built environment, even perceived with regard to its architectural and artistic features, is the major component of the representations given by the inhabitants of the city quarter. The "borgata" inhabitants seem to be almost exclusively interested in the type of life and people that can be observed in the city, showing far less interest in the built environment which, moreover, appears in these representations with the same schematic, repetitive features found in the representations they give of the built environment of the "borgata".

These findings suggest the conclusion that we are not dealing with one city of Rome and its inhabitants, but probably with as many cities of Rome as there are different conditions of urban life experienced by its various inhabitants.
REFERENCES


6. FLORISTICAL INVENTORY OF THE METROPOLITAN AREA OF ROME

Agnese Menichetti, Paolo Petrella, Sandro Pignatti
Department of Plant Biology, University of Rome "La Sapienza"

CONTENTS

1. Introduction
2. Data available
3. Method
4. Results up to 31-12-1986
5. Temporal development of the research
6. Expected conclusions
   Figures
   Summary
   References

35
The flora of the metropolitan area of Rome is fairly well known: the earliest reports date back to the 17th century, while abundant data have been available since the beginning of the last century. We therefore already have sufficient data to trace out the historical development of this flora over quite a long period of time. As yet no monographic work has appeared on the subject.

Nevertheless, many problems remain to be clarified before we can say that our knowledge of the botanical features of the city of Rome is really adequate. In particular, our knowledge of the natural vegetation that existed in the area before man arrived on the scene is still far from sufficient.

The plant species whose existence has been ascertained in the urban area of Rome number about a thousand, which is quite a high number compared with what is known of other big cities. This wealth of local flora is probably due to the survival, within the urban area, of biotopes in fairly natural conditions, above all to the west of the city, along the Tiber and in some areas protected as parks.

Over two years ago a systematic survey of the city flora was begun, with the aim of drawing up a complete, up-to-date inventory of what can be considered an essential component of the city's environmental heritage.

The survey is being carried out in the urban and suburban areas of the city of Rome, covering an area of over 300 square kms. within the Grande Raccordo Anulare, which marks the limits. Within this area a grid was traced out from a readily available map, showing 226 quadrants, each of a surface area of 1.6 square kms.

The inventory is based on a survey of each individual quadrant and the species present are noted in order to obtain a complete census of the local flora. As a general principle, at least two surveys in different seasons are necessary for each quadrant. In the cases so far studied, a single quadrant can show between 100 and 200 species, with a peak of 277 for a quadrant in the Cinecitta' area. There are some difficult problems to grapple with before we can understand the real significance of the numerical data. It is not easy to distinguish between the indigenous species and those that have somehow or other got through from plant cultivation; on the whole, however, we have tried to exclude from the lists of observed species those that owed their existence to cultivation.

So far 70 quadrants, amounting to about a third of the total, have been surveyed; in some of these cases, however, a fair amount of work remains to be done before the census can be considered complete. The 70 quadrants have shown 726 species, amounting to about three quarters of the estimated total for the urban area of Rome. Looking ahead realistically, it is likely to take another five years' work to complete the inventory.

The inventory now being worked on was planned to bring out a series of results. The first point is to check how much natural flora can still be found in the Rome area; this will enable us to take the necessary steps for the preservation and enhancement of this heritage. However, the full data obtained from the survey could provide material for experimentation in basic research work: evaluation of ecological urban conditions, of the impact of man and biotic elements (biological forms, chorotypes) on the local flora. Multivariate analysis of the lists for each quadrant are expected to provide a typology of the urban areas based on the occurrence of plant indicators.

Research carried out with CNR financial support, Contract n. 115,00329, "Biologia Naturalistica" Group.


7. LICHENS IN THE ROME URBAN AREA

Pierluigi Nimis, Mauro Tretiach
Department of Biology, University of Trieste

CONTENTS

1. Introduction
2. The epiphytic lichens
3. The epilithic lichens
4. Concluding remarks
   Summary
   References

39
SUMMARY

The study of lichens growing in urban areas is very interesting both in view of their use as bioindicators and from the more general standpoint of nature conservation. As bioindicators lichens have proved very useful in connection with the consequences of atmospheric pollution. Thorough studies of lichen vegetation have been made in many European cities and the need is now felt to extend this type of research also to urban areas in Italy.

Studies of lichen vegetation in the Rome area were begun in 1983. The interest in these studies lies in the fact that they are the first to be carried out in a large Italian city with a Mediterranean climate. Furthermore, since air pollution in Rome is mainly of urban origin, lichen cover is a problem for the archaeological remains, which abound in the city.

Lichen vegetation found on tree boles (epiphytic lichens) is extremely rich in the semi-natural areas surrounding the city. At Castelporziano more than 250 species have been identified. In the area inside the Ring Road, the number of lichen species decreases to about thirty. Material preserved in the Rome Herbarium shows that the lichen vegetation was much richer last century than it is now. Today the whole city centre is lacking in lichens (lichen desert). This indicates that the air is badly polluted.

Epilithic lichens have been studied mainly in the archaeological areas of the Roman Forum, Hadrian's Villa and Ostia Antica. They are particularly abundant in the Rome environs, where they can cause damage to buildings.

The study of the present distribution of the lichen species in the Rome area can provide a basis for monitoring the environmental situation in the city. Comparative analysis of the epilithic lichen vegetation in places located at gradually increasing distances from the city centre will provide us with further insight into the biodegradation phenomena leading up to the physico-chemical degradation of many monuments today located in the urban centre.

The study of lichens will subsequently be extended to the main archaeological areas of the Lazio coast in addition to the Rome urban area. For this purpose the same grid will be used as for the ongoing study of phanerogamic flora.

REFERENCES


COPPINS B.J. 1963 - The "Drought Hypothesis". In Ferry et al. (eds.) op. cit.: 124-142.


8. CHEMICAL POLLUTION OF THE URBAN ENVIRONMENT AND THE ASSESSMENT OF ENVIRONMENTAL RISK

Carla Jacobelli, Franco Massucca
Institute of Biomedical Technologies, C.N.R., Rome

Carmine Lanzara
Ministry of Defence, Rome

Paolo Salonia
Institute of Territorial Planning and Management, C.N.R., Naples

CONTENTS

1. Foreward
2. Assessment of the environmental risk: Method
3. The chemical risk
4. The study of the chemical pollution in the historical centre of Rome

Tables

References
SUMMARY

This paper takes into consideration the problem of chemical pollution of the urban environment, proposing a study plan applied to the city of Rome.

After pointing out the need to develop suitable methods for identifying and evaluating overall environmental risks, the different types of chemical risks are described.

The plan for coordinating ongoing research is then described: the treatment of atmospheric pollutants is followed by an analysis of the causes of pollution, in which factors affecting the behaviour of the pollutants are taken into account. The ultimate destination of the latter can thus be studied, together with any transformations undergone by them in the atmosphere. The proposed study plan calls for systematic and repeated tests to be carried out for an extended period using suitable monitoring techniques. Although initially limited to the historic centre of the Rome area, the tests will ultimately be extended to other parts of the city.

The methodology outlined herein should allow the investigation to be extended to the ultimate effects of chemical pollution on man, his environment and on buildings and monuments, particularly works of art.

REFERENCES


FINZI G., Un sistema di previsione e allarme in tempo reale dell'inquinamento atmosferico nella città di Milano, in Notiziario CNR Progetto finalizzato Promozione della qualità dell'ambiente, n. 11, 1980.


GUIDICINI P., Uomo, tecnologie e qualità della vita, Milano, F. Angeli, 1982.


LORENZINI G., Le piante e l'inquinamento dell'aria, Edagricole, Bologna 1983.


PART II

"TYPE TWO" STUDIES:

THE "SAMPLE-AREA"
9. TOWN-PLANNING ASPECTS AND QUALITY OF THE ENVIRONMENT.
A STUDY OF THE SAMPLE AREA.

Carlo Bagnasco
Department of Urban and Territorial Planning, University of Rome "La Sapienza"

Giuliano Bizzi
Department for Special Aid to Southern Italy, Rome

Bruno Filippo Lapadula
University of Cassino

CONTENTS


2. Town-planning and environment: an intersectorial survey of the sample area.

3. Further developments of the research in progress

Summary

References
SUMMARY

In the course of the studies carried out by the researchers of the "Urban-planning Group", taking into account also the contributions from the studies of other research groups in contiguous fields (UNESCO MAB ITALIA Project 11, 1981), an analysis was made of the physical, town-planning and socio-economic structure of the sample area (north-west urban sector of Rome) as it was shaped by the dynamics resulting from the action of different public and private developers. Particular attention was paid to the effects of these dynamics on the "environmental quality" of the area.

The research develops along two different lines (given that research methods and tools relating to the study of typologies are different from those used in research on socio-economic aspects), but its results are highly interrelated.

From the town-planning point of view the typological concept applies more to the definition of the "relationships" which develop between the various urban factors than to the classification of "types". In fact, it is clear that the same typologies can create different social "fluxes" depending on their location, as occurs, for example, between commercial centres in the outskirts and those within the city.

The same may be said of socio-economic analysis, for which the relations between the existing economic categories and the residents are more important than the types of survey indicators referring to the residents' income and professional status or to the number and type of existing economic activities.

In detail, identification of the existing typologies in the urban sector is based on indicators and thematic maps suitable for classifying the morphological characteristics of areas not built on (whether provided with facilities or not) and of built-up areas. They are also suitable for evaluating the degree of "urban quality" in relation to pre-established standards of accessibility, availability of space and services, etc. (Bagnasco, 1978, 1984; Las Casas, 1980).

The two analyses contribute to forming a comprehensive of the typical factors and problems related to the urban sector considered, and can thus be used to backup and compare the results obtained in environmental perception studies (Donnes, 1986).

Three main types of problem have emerged, which could be considered as three fields of further study: the flimsy productive structure which makes this area highly dependent on the outside world in employment matters; traffic congestion due to heavy commuter activity in connection with the shortcomings in the road network; the conditions of physical and social degradation of the outlying areas which have been built up in spite of any regulations, with degraded buildings and a lack of infrastructures and services, resulting in an extremely low "urban quality".

On the basis of their knowledge of the main features and problems involving the area, the "Urban-planning Group" researchers have developed and begun to implement the various phases of surveys aimed at gaining further insight into a number of specific aspects and problems, relating mainly to the effects of the urban and socio-economic development of the area on environmental quality.

In particular, a more intensive analysis will be made of the services provided in the area under examination with reference to a wider range of activities. During this phase the accent will be on making evaluations on the overall capacity to satisfy the inhabitants' needs rather than on individual services.

Also in this phase typological research tends to define the relationships set up between the various urban constituents and the population, making use of suitable indicators and thematic maps as described previously.

In this case the reference to the whole city, whenever appropriate reference maps are used, is related to the possibility of identifying the presence of linking elements between the urban sector considered and the whole city, e.g. city parks, main roads linking up different areas or leading towards the centre.

At this stage a number of considerations can be made, for instance, whether the
green areas are a structural part of the urban area or involved in its further
development (e.g. uncultivated or highly fragmented farmland, or large rural
properties) or indeed, in the case of urban parkland, whether it is necessary to the rest
of the city.

Subsequently it will be attempted to identify the subclasses of the three
categories of space defined above, which can be usefully used as geographical
classifications of areas inside the urban sector.

In particular, as far as the morphological characteristics are concerned, thematic
and synthetic maps will be produced indicating the ground's altimetry, its clinometry,
and its main morphological and hydrological features.

In the case of unbuilt spaces thematic and synthetic maps will be made of the
agricultural areas and type of agriculture: any uncultivated areas; green areas,
distinguishing between private, periurban, and town or suburban parkland.

For existing built-up areas thematic maps will be used indicating the typological
and functional characteristics. In the main consideration will be given to the spaces to
be used for residential purposes and services, subdividing them into their functional
components and typologies.

In the case of infrastructures, the various types of roads will be classified and a
study made of the various modes of transport, e.g. whether or not they are local,
urban or extraurban. Furthermore, an analysis will be made of the stage of primary
urbanization reached by the area.

Superposition of the various thematic maps can lead to the identification of areas
with different degrees of complexity and different functions. In this way each of them
can be characterized typologically (e.g. urban node, fringe area, etc.). On the basis of
this first reference it will be possible to select those economic activities or functions
considered to be appropriate to and significant of the area subdivisions.

The sum total of these activities, selected on a qualitative rather than
quantitative basis, represents the starting point for the survey of socio-economic
characteristics. This analysis will be carried out using quantitative survey methods
and, in accordance with the aims of the survey, decisive importance will be given to
calculating the incidence and economic weight of the locations of the selected
activities on the format and type of the population living or working in the urban area.
It follows that the classes of activities must be chosen on the basis of the extent to
which they qualify the subareas and not as a function of their overall influence on the
urban fabric under examination.

In this case it is necessary to provide criteria to be followed in choosing the
economic activities to be considered since it is not possible to operate on the whole
range of existing activities. In this connection, as mentioned earlier, the activities
selected will be those most specific to each of the areas identified in the first phase.

This type of operation is based on the assumption that it is relatively non-
significant, for instance, to associate the study of any existing quaternary activities
with a fringe or outlying area.

Furthermore, the computation of the incidence between demographic weight and
the weight of economic activities can be facilitated by using a series of comparative
analyses based on the study of the same activities extended to cover the whole
demographic format of the city for all the existing locations in the city.

The calculation of the incidence between demographic weight and the weight of
each of the activities selected is dependent on the identification of the different
population thresholds required for at least one of the chosen activities to exist in each
subarea considered. The evaluation of this series of thresholds will be checked and
compared with similar population thresholds obtained from the computation carried
out on the whole urban format.

This type of comparison will reveal the quantitative differences between the type
chosen in the various subareas and analogous ones in the rest of the city.

The selection of sample activities for each "type" of area will be based on existing
literature on the subject and on specialist studies already carried out (Bizzi and
The relation between the type and number of activities and the resident population will be established using the algorithm developed by J. Berry and W. Garrison (1953). This method still appears to be the one giving the most reliable and conceptually sound results also with reference to the study of the capacity of available services to satisfy the inhabitants' needs.

REFERENCES


10. MANAGEMENT AND CONTROL OF THE ENVIRONMENTAL RESOURCES: METHODOLOGICAL PERSPECTIVES AND POSSIBLE APPLICATIONS IN THE SAMPLE AREA

Rita Colantonio Venturelli
Institute of Territorial Planning, University of Ancona

CONTENTS

1. Economy and/or ecology
2. The management of environmental resources
3. The "environment-system"
4. Methodological issues
5. The primary activity and the environmental resources
6. Agriculture and water pollution
7. The problem of pesticides: a case study
8. Some concluding remarks
   Tables, Figures
   Summary
   References
A recent idea that seems to be catching on rapidly is that the society based on industrial economy definitively excludes any possibility whatsoever of coexistence between the present economic system and the overall organisation of the environmental system. The latter is articulated both into normal, anthropized components and in terms of inter-relationships between the components themselves. In fact, a clash is building up between economics, as traditionally understood, and ecology, seen as a possible alternative, i.e. between the quantitative growth and the qualitative development of the system. This clash involves scientists and cultural figures, who are working to clarify and bring out the full implications of the gap that divides the opposing factions.

The innovatory stimulus which came into being in 1945 is apparently running out of steam and, for some time now a critical assessment of it has been under way. The theory of the "state of entropy", as regards the social system, has been developed in this context. This claims that the industrial societies of today are at a stage where their complexity and interdependence have reached such dimensions as to make any control or overall view of them impossible under present conditions. This creates a trade-off within the system whereby the growth of efficiency, which reaches a high level of division of labour and of capital in the productive process through increased specialisation, is achieved through increasing transaction costs for social co-ordination and the maintenance of the natural environment.

Confirmation of this is provided by the fact that the first generation of the pollution problems of the environmental resources - air, water, soil - could be situated and defined in a river basin, for example, or, in any case, in geographical units that were defined and could therefore easily be controlled through defined models of analysis (even if these were debatable from certain points of view). These problems very often had characteristics of reversibility without excessively high costs, and alternative technologies made it possible to regenerate the quality of the resources. Now, however, the industrialised countries are faced with the second generation of problems. These regard forms of pollution that can increase the spatial scale of the area concerned by up to a hundred times. By now, it is known that the polluting agents in America and Europe travel hundreds and, at times, thousands of kilometres from their places of origin. This jump in scale is bringing about a change in the qualitative character of the problems. The costs involved in reversing the tendencies now under way are enormous. Traditional policies cannot be applied as the sources of emission and the points of greatest impact are hundreds or thousands of kilometres away from each other. In these cases, the principle that whoever is responsible for the pollution is to pay proves to be economically destructive and politically impracticable, as well as having defects from the point of view of international legislation.

Although the present problems seem to be far from solutions that can readily be put into practice, we can already glimpse the birth of the third generation of problems in this field. One example is the accumulation of carbon dioxide in the atmosphere. Geological and biological evolution have led to an equilibrium among the chemical components of the atmosphere. Man has changed certain of these balancing forces. Deforestation for agricultural or building activities has produced more carbon than was previously absorbed by the atmosphere. Thus industry and agriculture have set in motion a new generation of problems whose scale is at least that of our hemisphere, if not of the entire planet. It is therefore clear that it is no longer a case of acting on pollution or on the environment or on the individual resources degraded by industry or agriculture. It is now necessary to develop integrated study programmes of ecology directed towards the links between the factors of the biological world and the atmospheric and hydrospheric process on the planetary scale. Through the use of the great knowledge already acquired and of technology (not to mention the methods and
proposals of the international research bodies that have long been involved with this problem) it is possible, for example, to formulate programmes of expansion and development for energy and agriculture in contexts that allow for the limited nature and ecological interdependence of the resources of every type that scientific and economic co-operation has made available.

It is therefore necessary to look for ways in which the themes displayed can be tackled and analysed; in such a way as to obtain the information necessary to formulate concrete answers to the very concrete problems that are emerging with ever-increasing strength.

It is because of this objective that the present contribution has two different aspects. On the one hand, it proposes a general methodological analysis of the "great themes" already mentioned which characterise research today, especially with regard to the points where the interests of the various disciplines studying the complex of environmental components meet.

On the other hand, it offers two studies of a more applied nature, both of which attempt to evaluate the effects of certain economic activities on the environment.

The first study concerns primary activity: it is a simple mathematical model of the relationship between the crop-growing activity of agriculture in a given area and the consequences that the pesticides it employs may have on the body of water in the same area.

The second study is taken from a German work and illustrates a way of assessing (by means of a type of "ecological balance sheet") the effects of a canning business on the use of the environmental resources of a certain region.

The examples given could be applied in both microeconomic and macroeconomic terms through the carrying out of a specific study, which would also include the gathering of the necessary data. This would allow us to study in greater detail and in a more concrete way the state of certain environmental components of the sample area, at present being examined by the MAB 11 group of Rome, in relation to their economic employment. Further contributions of this nature, which could be "recomposed" along with the one that has been laid out schematically here from the methodological point of view, would then enable us to reconstruct still more of the relationships between the parts and the whole. That is to say, by studying the greatest possible number of relationships between interacting factors in the ecosystem as a whole, we could try to draw nearer to the reality by "reconstructing" the Roman ecosystem, i.e. by carrying out "practical ecology".

REFERENCES

Cee, Lo stato dell'ambiente, Primo rapporto, Cee, Bruxelles, 1977.
GIACOMINI, V., ROMANI, V., Uomini e parchi, F. Angeli, Milano, 1982.


LEONTIEFF, W., Il futuro dell'economia mondiale, Mondadori, Milano, 1977.


11. QUARTER, CENTRE, PERIPHERY IN THE CITY OF ROME:
FROM THE INHABITANTS' COGNITIONS
TO THE "SOCIAL IMAGEABILITY" OF URBAN PLACES

Mirrila Bonnes
Department of Psychology of Processes of Development and Socialization, University of Rome "La Sapienza" and Institute of Psychology, C.N.R., Rome

Gianfranco Secchiaroli
Department of Sociology, University of Bologna

Giuseppina Rullo
Institute of Psychology, C.N.R., Rome

CONTENTS

1. Introduction
2. Method and procedures
3. Results and discussion
   3.1. Molar affective qualities of the three places
   3.2. Content of the images of the three places
      - Spatial features
      - Descriptive features
      - Descriptive-evaluative features
   3.3. Formal aspects of the images
      - Complexity
      - Clarity
4. Conclusions
   - The Quarter of residence
   - The Centre of the city
   - The Periphery
5. Future directions of research

Tables, Figures
Summary
References

59
The research aimed at examining the "social imageability" (Stokols 1981) of some of the most significant places in the city of Rome through a study of the inhabitants' cognitive representation of these places. Our initial assumption was that the whole city tends to show internal differentiation in various parts or "places" (Canter, 1977; 1984), not only in accordance with the various socio-physical features but also in terms of shared images and meanings that the inhabitants develop in relation to them. To this end the following three urban places were taken into consideration: the Quarter of residence, the Centre and the Periphery.

Our aim here is to describe the main features assumed by each of these three places in the inhabitants' representations, both at the level of "molar" affective qualities (Ward, Russell, 1981) and at the level of image, in terms of the spatial, descriptive and evaluative aspects implied.

Our enquiry was conducted in two successive stages of research, the first exploratory and the second quantitative-extensive on a total sample of about 460 inhabitants, all resident in the same quarter (Aurelio) situated in the north-west area of the city (the sample area). This quarter occupies an intermediate position between the central area and the further outskirts.

The following main points emerged from our research: representation of the Quarter of residence appears somewhat ambivalent and contradictory, especially if we compare the molar evaluation, which is on the whole positive, with the contents of image representation, which mostly refer to negative features of the environment, namely to those evaluated as shortcomings. Spatial localization of the place appears more limited than the conventional delimitations, but tends to stretch out towards the centre. The image contents of representation appear to be based mainly on environmental features linked with functionality and uses. This was true in reference both to the physical-perceptive features (the road network from the point of view of communications and shopping) and to those involved with meanings (above all in terms of inefficiency-efficiency); in both cases evaluations were mainly negative.

Therefore, the representation of the quarter of residence appears to be somewhat problematic for its inhabitants, particularly with regard to the integration of the cognitive and affective aspects. This is probably related to the "place identity" processes (Proshansky, 1983) implied in perception of this urban place, as well as with the objectively recognizable shortcomings of the quarter under consideration.

On the other hand, representation of the city Centre appears to be distinctly characterized from the affective point of view, valuations tending mainly, though not exclusively, towards positive polarization, both at the level of molar description and in terms of image contents. Spatially this place tends to be represented as spreading outwards from the north of the historical centre, and to be shifted towards the interviewees' quarter of residence. Physical-Perceptive features dominate in the image representation, with architectural (buildings, monuments) and functional (shopping, traffic) elements playing a decisive role; the former receiving exclusively positive evaluations, the latter mainly positive in terms of shopping and exclusively negative in relation to traffic. The "Meaning" features are mainly involved with the context-atmosphere, with particular reference to the high level of environmental stimulation. This environmental feature not only characterizes the representation of the Centre to a high degree, but also appears to be the most common object for the ambivalence the Centre arouses among inhabitants, in terms both of molar valuations and image contents.

Finally, representation of the Periphery is, at the affective level, the most clearly oriented with almost exclusively negative valuations. Spatial localization of the periphery is rather vague, concentrating mainly on the network of ring roads and exits from the city. Here the image content of representation includes more "Meaning"
features ("sadness", "marginality", "poverty", "confusion") than Physical-Perceptive features, the latter relating mainly to city-planning ("disorder-planning" and "distance-remoteness" from the rest of the city). Features referring to functional aspects are almost entirely absent.

On the whole, representation of the Periphery appears in many ways to be complementary to that of the other two urban places considered. On the one hand it tends to contrast with the Centre, above all because of its opposite affective polarization - almost exclusively negative; on the other hand, it appears complementary to the Quarter of Residence mainly because of the virtual absence of functional attributes shown both at the Perceptive level and at the level of "Meaning" in terms of activities-uses.

The next steps of the ongoing research will aim at shedding light on the links between the representation features so far examined and possible differentiations in the typology of the inhabitants/users of the places under consideration. This should afford some elements to help the understanding of how such "represented environments" are constructed.

REFERENCES


12. THE QUARTER OF RESIDENCE, THE CENTRE AND THE PERIPHERY 
IN THE REPRESENTATIONS OF YOUNG RESIDENTS 
IN VARIOUS QUARTERS OF ROME

Flora Amoni
Ministry of Public Education

Mirilia Bonnes
Department of Psychology of Process of Development and Socialization, University of Rome "La Sapienza" and Institute of Psychology, C.N.R., Rome

Maria Vittoria Giuliani
Institute of Psychology, C.N.R., Rome

CONTENTS

1. Introduction
2. Method
3. Results and Discussion
   3.1. Description of Quarter, Centre and Periphery
       - Content aspects
       - Formal aspects
   3.2. Evaluation of Quarter, Centre, Periphery
4. Conclusions
   Tables, Figures
   Summary
   References

63
SUMMARY

The aim of the research presented is to study the cognitions of the Rome urban environment in a group of young residents aged about twelve.

The working hypothesis adopted is that a knowledge of the environment is usually the result of experiences accumulated and organized as the product of interactions between the individual and the environment (Golledge et al., 1985). Furthermore, the cognitive representation of the city in particular is developed by the resident as a function of existing socio-physical characteristics and of the system of relations set up with the latter in terms of cognitions-evaluations and actions-exchanges (Canter, 1984).

In view of the close relationships that exist between perceptive, cognitive and affective components involved in the construction of environmental representations (Ward and Russel, 1981; Tajfel 1982), the aim of our investigation was to ascertain whether different experiences of living in the city due to the fact of residing in different quarters or 'places' (Canter, 1977, 1984) in the city gave rise to different cognitive modes of representing the main 'places' of the city, in particular the Centre and the Periphery, as well as of one's own quarter of residence.

The results presented herein refer to a comparative analysis of free descriptions of the urban places specified above, given by a sample of 123 students living in 3 different quarters of the city. The quarters differed in their socio-physical characteristics and geographical location within the broader urban context: a central quarter (the "rione" Regola), a peripheral quarter (Centocelle) and an "intermediate" quarter, the Aurelio quarter, located inside the "sample area" selected for the whole MAB-Rome Project (Bagnasco, Bonnes, Vigotti, 1981). The latter quarter was also used for a survey of cognitions-representations concerning the environment in the adult populations, as reported elsewhere in the present volume (Bonnes et al.).

Also the method of investigation was similar to the one used in the above-mentioned research. This was done so that the results obtained for different age groups living in the Aurelio quarter could be compared.

The contents of the free descriptions given by the subjects was analysed with special reference to the type of environmental aspects cited. The latter were grouped in several sub-categories within the following five main categories of environmental features: "town planning", "architectural", "functional", "way of life" and "human relations".

An investigation was also made of the internal organization of these representations (formal aspects) with regard to "complexity" and "clarity" with which the relevant cognitive features present tend to construct the representations themselves. The analysis of the responses of the subjects living in the various quarters was indicative of considerable differences in the representations referring to the three urban areas considered.

The image of the Centre was fairly widely shared as regards the importance of specific places, architectural and monumental structures, the attractiveness of the shops, the heavy traffic and crowds. The perceived image is one of a place with attractive monuments, the enjoyment of living in which is somewhat spoiled by the congested traffic and crowds, and by advancing environmental and human degradation. The image of the periphery was less uniformly shared and more diversified, as indeed also the actual conditions of the Rome periphery considered are diversified: it ranges from residential areas characterized by prosperity to the harsher reality of the 'borgate'.

Highly differentiated descriptions were obtained for the quarters of residence, although a number of common features point to the importance attributed in the cognition of the quarter to factors of direct personal daily experience, such as human relations, the availability of parks and playgrounds, cleanliness and the quality of life.
in general.

This age group is fairly uniformly characterized by the scant attention paid to specific functional aspects of the environment of their own quarter. As the parallel study also published in the present volume (Bonnes et al.) indicates, the opposite seems to be true for adults of the same quarter.

Quite apart from the features they have in common, the environmental representations of the young subjects considered appear to differ according to their specific residential experiences, in relation both to the different urban places represented, such as one's own quarter of residence, and to the same urban place represented such as the centre and the periphery.

The inhabitants of the 'intermediate' quarter Aurelio seem to be characterized by different expectations from those referring to the Centre. These expectations can be summed up as a demand for 'liveness' in the broad sense with reference to the nearby living context of the quarter, particularly as far as parks and other green areas are concerned. The city Centre, quite well known on the whole, is assigned a function more closely related to monuments, shopping and also cultural pursuits.

By and large the inhabitants of this quarter can be said to have a perception of the complementary relationship between quarter of residence and Centre, and therefore of the integration of these two urban places and of a consequent increase in residential satisfaction.

The situation regarding residents of the central quarter tends to be similar; their representations of their own quarter and of the Centre tend to coincide. One peculiarity of this group is the special emphasis they usually place on architectural aspects; the latter seem to replace the interest in parks and other green areas which predominates in the representations of the children living in the Aurelio quarter. The representation of Periphery held by the inhabitants of the Centre seems to be particularly vague.

The inhabitants of the peripheral quarter seem to display particularly contrasting images of the three places considered, which show no signs of moving towards integration.

The Centre seems to be perceived mainly as different from one's own quarter (beautiful buildings, chaotic way of life). Interest seems to be focussed on parks and the countryside, on poles of attraction in the Periphery (fun fairs). The relationship with one's own quarter does not seem very satisfactory; the overall image of the quarter is negative compared with the rest of the city.

On the whole the different residential experiences of the children seem to be linked to the different ways of representing the urban environment and its places, not only with regard to the type of environmental elements represented but also to the ways in which such representations are organized in terms of the "complexity" and "clarity" of the elements present.

The structure of these representations also seems to be indicative of the emergence of specific processes of environmental adaptation or 'optimization' (Stokols, 1978). These processes seem to orientate the subjects towards representations that enhance the available environmental aspects. In particular, the different relative weight given to several environmental aspects in the children's construction of the representation of their own quarter can be interpreted as being related to the "real" shortcomings affecting the various quarters and to the consequent "optimization" of the existing one green areas and parkland in the Aurelio quarter, architecture in the central quarter and human relations in the peripheral quarter.
REFERENCES


13. ENVIRONMENTAL COMMUNICATION AND COGNITION
OF THE URBAN ENVIRONMENT:
A PROPOSAL FOR INTEGRATED RESEARCH ON THE URBAN ENVIRONMENT

Elide Monzeglio
Faculty of Architecture and Urban Planning, University of S. Paolo, Brazil

Mirilia Bonnes
Department of Psychology of Processes of Development and Socialization, University of Rome "La Sapienza"

CONTENTS

Foreward
1. Aims of the research
2. Method
3. Operative aspects
   Summary
   References

67
This research plan arises out of the intention to develop scientific exchange, started at the international level, between research groups in the University of Rome, La Sapienza, and the University of S. Paulo (Brazil) for the purpose of carrying out integrated studies on the urban environment as part of the UNESCO MAB no. 11 Programme.

The research outlined here aims at accomplishing an integrated study of the urban environment of Rome with a view to achieving an integrated approach along the lines of environmental psychology, with special reference to ongoing studies in Rome on the subject of "environmental representations" or "cognitions" (Bonnes, Secchiaroli, 1981; Bonnes, 1983; Bonnes, 1984, 1986), with research in the field of architecture and town-planning, particularly to studies on visual environmental communication: Monzeglio, 1980, 1981; Rapoport, 1982.

The initial assumption for our interdisciplinary approach is that the environment "meanings" composing the environmental cognitions possessed by the users and studied by environmental psychologists are constructed on the particular nature of the physical structure of the environment concerned, in this case the urban environment.

The environment represented at the cognitive level, as it emerges from the users' cognitions, must be viewed not only as the result of the psychological processes taking place within individuals, but also as the result of environmental processes possibly taking on perceptive significance in terms of the following main aspects:
- the behaviour patterns of those using the environment;
- the functions eliciting such behaviour patterns;
- the meanings attributed to these functions;
- the overall patterns in which the physical space "supporting" the environment concerned is structured.

Our aim is to arrive at a definition of the environmental representations that can be seen to illustrate not only the psychological processes through which the users construct their own cognitions of the environment, but also the environmental processes connected with these cognitions at the level of visual communication.

The first stage of research is to implement a pilot project aiming above all at developing and applying the appropriate method for achieving the interdisciplinary approach described above. Study will concentrate on a "sample area" (the north-east part of the city), with particular reference to the section (the Aurelio quarter) that has already been made object of research along the lines of environmental cognitions (cf. Bonnes, Secchiaroli, Rullo in the present volume).

In order to facilitate the integration of the various disciplines involved, inquiry into the visual-perceptive features of the environment will start from a consideration of the categories of analysis and relative results emerging from the study of the environmental cognitions of residents of the Aurelio quarter (Secchiaroli, Bonnes 1983).

Research Programme partly funded by the "Agreement for Cultural Exchange" between the Department of Psychology of Processes of Development and Socialization of the University of Rome and the Faculty of Architecture and Town-planning of the University of S. Paulo (Brazil).
The final choice of environmental indicators and definition of the spatial and conceptual field to be considered will be made in accordance with an operative system allowing the greatest possible integration of the work of the various specialists in order to achieve the desired interdisciplinary approach.

REFERENCES


"TYPE THREE" STUDIES:

THE SPECIFIC PROBLEMS
14. A CROSS-CULTURAL STUDY OF REPRESENTATIONS OF THE URBAN ENVIRONMENT

Research project on the psychological construction of urban setting
in cities of high cultural value: the case of Rome.

Mirilia Bonnes
Institute of Psychology, C.N.R. - Rome - Italy

Denise Jodelet
Ecole des Hautes Etudes en Sciences Sociales, Paris - France

Lenelis Kruse
University of Hagen - Hagen - Germany

Peter Stringer
Queen's University - Belfast - U.K.

CONTENTS

1. Foreword
2. Aims of the research
3. Methodological aspects
   Summary
   References
SUMMARY

The present research project refers to the proposal made by the international working group set up in 1982 at the European Laboratory of Social Psychology of the Maison des Sciences de l'Homme in Paris. The purpose was to implement a programme of collaboration between the various European social psychology research groups aimed at studying the "Representation of High Value Urban Environments\(^\text{1}\) (Groupe d'Etude sur les Representations Urbaines = GERU).

In view of the fact that Environmental Psychology grew up mainly in the USA, where the cities have quite different characteristics from the European ones, it would seem important to pay particular attention to the more typical aspects of the European urban environment compared with the US situation, e.g. the extensive historico-cultural background of many European cities, which becomes predominant in some of them, for instance, Rome.

Environmental Psychology has explicitly underlined the crucial role played by cultural and national factors in the process of individuals' adaptation to the environment (Altman, Chemers, 1980; Altman et al., 1981, Rapoport, 1969, 1982; Bonnes et al., 1987). This role is related both to the socio-physical peculiarities of the setting considered and to the socio-cultural and national characteristics of the individuals involved. This "cultural dimension" of the urban experience appears to be crucial not only in the case of residential urban experience, i.e. prolonged in time and involving the inhabitants, but also in that of shorter urban experiences, i.e. visitors or temporary residents.

It is therefore proposed that a programme of cross-cultural and cross-national studies be implemented jointly in the various European countries for the purpose of gaining further insight into the psychological processes contributing to the psychological construction of the urban setting and into the cultural dimensions by means of which these processes can be specifically characterized.

These studies are aimed at investigating the ways in which the representation of the urban setting of a large European city of high cultural value, such as Rome, is constructed by residents and visitors from different European countries.

The study involves residents of, and visitors to, the city of Rome coming from the following countries: Italy, France, Germany, the UK.

A description is then given of the methodological and operational aspects of the research plan as it was laid down in 1984 after the various meetings held by the GERU working group, and of the progress made by the research over the past few years (Bonnes et al., 1986).

Research project funded by the C.N.R. as International Bilateral Project (with a quadrilateral agreement) between Italy, Istituto di Psicologia del C.N.R. and France, Ecole des Hautes Etudes en Sciences Sociales.

\(^1\) Research project funded by the C.N.R. as International Bilateral Project (with a quadrilateral agreement) between Italy, Istituto di Psicologia del C.N.R. and France, Ecole des Hautes Etudes en Sciences Sociales.
REFERENCES


BONNES, M., Profilo critico dell'emergente psicologia ambientale, Ricerche di Psicologia, 1979, 10, 161-179.


BONNES, M., L'emergenza della psicologia ambientale per una gestione dell'ambiente "per l'uomo", Senso Democratica, 1983, 6 (1), 44-56.


15. PROJECT-STUDY OF THE PLANT COVER
IN THE ARCHAEOLOGICAL AREAS OF ROME

Erika Pignatti
Department of Biology, University of Trieste

CONTENTS

1. The scientific problem
2. Actual knowledge on the vegetation
3. Future directions of the research
   3.1. Floristical level
   3.2. Autecological level
   3.3. Hysterical development of the plant cover
   3.4. Interactions with animals and man
4. Localization of the research in the Roman area
   Summary
   References

77
The following is an operative program for the study of the plant cover of the archaeological areas of the Rome district. No monographic study on such a subject has yet been carried out in Italy or abroad; nevertheless, the Rome district appears to offer particularly favourable conditions for this type of research. Some preliminary field work, together with the unfortunately rather scanty bibliography available on the subject can demonstrate the main features of the flora in the archaeological areas. The latter includes several hundred species, some of which specialized in this environment.

Plant life in the archaeological areas reveals a certain richness of vegetation types reflecting the variety of materials in the substrata (brick, lime-stone, volcanic stone), as well as the degree of exposure and inclination of the substrata themselves. So far some of the main types of environment can be distinguished, each with its own plant features, but analytic study will probably lengthen the list: algae patinas coating the stones, for example, moss and lichen communities, and vegetation with vascular plants dominant on the walls (the vertical surfaces and tops), paving and in the immediate surroundings of monuments. Obviously, cultivated areas will be excluded from this type of research.

Research is carried out at three levels: floristical, autecological and synecological. Subjects to be worked on in the future include study of the micro-evolution of species that have chosen to live on archaeological remains and the setting up of a data bank for processing data on flora. Our knowledge of the autecology of the species concerned is very scanty and there is a real need for detailed research in this field. The synecology of the plant cover can be studied on the basis of a survey on the plant associations occurring.

One of the most stimulating aspects of this research is the study of the relationship between environment and vegetation within a historical perspective. Approaches to research are prompted by a number of aspects, including: examples of ruins covered with natural vegetation, iconographic documentation of the past, the appearance of species introduced as a result of geographical discoveries and cyclic trends in the cultivation of species reflecting changes in horticultural uses.

Interaction between plants, animals and man can be examined through research in these spheres. Among animals, the closest links are with birds or snails. As to man, one of the problems worth examining is the presence of plants acting as agents for allergies in the archaeological areas.

The research program outlined here applies to cities with extensive archaeological remains situated in the temperate zone, with areas continuously inhabited at least from the Middle Ages onwards. The cases of Jerusalem, Athens, Peking and Rome were examined, and comparative analysis has shown that the most favourable conditions for the study of the plant cover of archaeological areas occur in Rome.
REFERENCES


16. DOCUMENTATION PROBLEMS CONCERNING THE ENVIRONMENT.
SOME ISSUES RELATED TO THE ESTABLISHEMENT OF A CENTER FOR DOCUMENTATION,
INFORMATION AND EDUCATION ON ENVIRONMENTAL CONCERNS IN THE CITY

Bruno Filippo Lapadula
University of Cassino (VT)

CONTENTS

1. Foreword
2. Relationships among administrators, scientists, organizations and the public
3. Three programmes under examination
   3.1 The requirement
   3.2 The environmental unsatisfaction
   3.3 The philosophy
   3.4 A programme under realization
4. Concluding remarks
   Summary
   References
SUMMARY.

This paper is the result of collaboration, in 1983, between Project MAB 11 on Rome and the Civic Administration of the city of Barcelona in which the creation of a "Centre for the Urban Environment" was discussed. The future activity of this centre is to be included in the UNESCO MAB Programme.

The results of the Seminar confirmed the usefulness to a large urban area of a meeting place and information centre on environmental concerns. During the Seminar local administrators, experts and academics made a thorough analysis of the programmes and organisation of the Centre. Problems of this kind had already been carefully examined, amid many vicissitudes, during the Project MAB 11 on Rome. In fact even in the case of Rome the need for a more extensive exchange of information between the public administration, the University, various organisations and the citizens has been felt for a long time: both for the purpose of increasing knowledge of the specific urban environment of the city of Rome and of allowing a more thorough examination of the urban system.

Not always, in fact, does the public know the real nature of environmental problems in a highly populated urban context and it often has a distorted and biased image of the latter. Very often there is only a vague awareness of a dissatisfaction with the environment and any real information about daily public health problems is lacking. Awareness is very often limited to seeing only the most obvious aspects of the problem and not the most dangerous ones.

The general features of a permanent Centre for information and education on the environment were worked out by V. Giacomini in 1979 although, unfortunately, Professor Giacomini's initiative could not be carried out. Such has been the case also with a more recent initiative -sponsored by the Environmental Department of the Municipality of Rome -even though in this case many details had been decided upon.

In spite of the many difficulties, the demand still exists and is part of the wider framework of information systems necessary for urban planning. This is not only a problem of the gathering and treatment of data on the environment, even though the contribution that data processing can give is essential. We must not forget, in fact, that in the philosophy of the MAB Programme the focus of attention is Man. This is the real reason why the idea of a Centre is recurrent and important - because it is associated with the image of an actual physical place where people can go, meet, ask questions, and talk.
REFERENCES


PART IV

INVolVEMENT OF MAB-ROME PROJECT IN SCIENTIFIC EVENTS
IN VolvEMENT OF MAB-ROM E PROJECT IN SCIENTIFIC EVENTS

1982

  Paper on "The study of urban representation inside the UNESCO-MAB Project on the city of Rome".
  Authors: Bonnes, M., Secchiaroli, G.

- Establishment of the "Group Européen pour l'Etudes des Representations Urbaines (GERU) at the Laboratoire Européen de Psychologie Sociale de La Maison des Sciences de l'Homme (Paris), with specific interest on implementing and supporting the studies on Environmental Perception of the MAB-Rome Project on the city of Rome.

  Papers on "Verso un approccio multidimensionale alla rappresentazione dell'ambiente urbano: lo studio MAB-11 sulla città di Roma" and "La rappresentazione della città di Roma in ragazzi con diversa esperienza residenziale nella città".
  Authors: Bonnes, M., Muzi, C., Secchiaroli, G.

1983

  Invited Paper on "Per uno studio contestuale della percezione dell'ambiente urbano: lo studio dell'UNESCO, MAB n. 11 sulla città di Roma".
  Authors: Bonnes, M.

- Publication of the Progress Report on Environmental Perception Studies of the MAB-Rome Project: "Complessità dell'ambiente urbano e rappresentazioni cognitive degli abitanti: verso un'analisi multidimensionale delle cognizioni dell'ambiente urbano romano".
  Authors: Secchiaroli, G., Bonnes, M.

  Paper on "The study of the Rome urban representation with a cross-cultural approach."
  Authors: Bonnes, M., Secchiaroli, G.

  Paper on "Cognizioni ambientali ed immaginabilità sociale dell'ambiente urbano".
  Authors: Secchiaroli, G., Bonnes, M.
- Publication of the article "Roma: la busqueda de la globalidad" in La Ciudad. Ambiente, 38, CEPA, 1983.
Authors: Bonnes, M., Bruno, F., Colantonio, R., Muscara, C., Selem, H.

- Conference on "Centro del Medio Urba". MAB-Barcellona Project. Barcellona (Spain), December 1983.
Invited paper on "The MAB-11 Project on the city of Rome and documentations problems concerning the city".
Authors: Lapadula, B.F.

1984

Invited paper on "Ambiente oggettivo, ambiente soggettivo: verso un approccio ecologico".
Author: Bonnes, M.

- Regional Seminar for Latin American and Carribean on "Environmental Perception". UNESCO, Regional Office for Sciences and Technology for Latin America and the Carribean (ROSTLAC). Montevideo (Uruguay), April 1984.
Invited paper on "An ecological approach to urban environment perception: the Rome case study MAB-11".
Author: Bonnes, M.

Communication on "Indicatori ambientali e qualità dell'ambiente urbano: lo studio MAB sulla città di Roma".
Authors: Lapadula, B.F., Karrer, F.

Paper on "The cognitive construction of the urban environment: a multidimensional and categorial approach."
Authors: Bonnes, M., Secchiaroli, G.

Invited paper on "The active participation of scientists and the public in urban planning: the Rome case study".
Authors: Bonnes, M., Bagnasco, C.

Proposal on "A cross cultural study of representations of the urban environment: the psychological contraction of the urban setting in cities of hight cultural value".
Authors: Bonnes, M., Jodelet, D., Kruse, L., Stinger, P.
  Author: Bonnes, M.

- Publication of the article: "Per uno studio contestuale della percezione dello ambiente urbano", in Sociologia urbana e rurale, 1984, 14-15, pp. 121-129.
  Author: Bonnes, M.

  Invited paper on "An ecological approach to urban environment perception".
  Author: Bonnes, M.

1985

  Paper on: "Contributo per un approccio interdisciplinare all'analisi dell'ambiente urbano di Roma".
  Authors: Bagnoceo, C., Bonnes, M., Colantonio Venturelli, R., Lapadula, B.F.

  Paper on: "Perception and environmental education in a highly complex urban situation: the Rome case study".
  Authors: Amoni, F., Bonnes, M., Giuliani, M.V.

  Author: Bonnes, M.

- Publication of the chapter on "Ambiente objetivo e ambiente subjetivo: para una abordagem ecológica", in Sinopses, 8. Facultade de Arquitettura e Urbanismo, Universidade de Sao Paolo (Brazil), 1986, pp. 168-189.
  Author: Bonnes, M.

  Author: Bonnes, M.

1986

  Invited paper on "A cross-cultural approach to temporary experience of the city of Rome".
  Authors: Bonnes, M., Jodelet, D., Giuliani, M.V., Secchiaroli, G.
  Invited paper on "An ecological approach to the city identity: the UNESCO MAB 11 Project on the city of Rome".
  Authors: Bonnes, M., Secchiaroli, G.

  Author: Bonnes, M.

  Paper on "Activities and urban places inside a large Italian urban setting".
  Authors: Bonnes, M., Mannetti, L., Tanucci, G., Secchiaroli, G.

  Papers on: "Verso uno studio integrato dell'ambiente urbano: il Progetto UNESCO-MAB sulla città di Roma", and "Dimensioni d'uso di un ambiente urbano complesso e tipologia degli abitanti" and "Dimensioni valutative del proprio quartiere di residenza per uno studio di congruenza ambientale".
  Authors: Ardòne, R.G., Bonnes, M., De Rosa, A.M., Mannetti, L., Tanucci, G., Secchiaroli, G.

- Establishment of scientific collaboration between the Research Groups of the MAB-Rome Project (Coordinator M. Bonnes) and of the MAB S. Paolo (Brazil) Project (Coordinators: L. Ginover and E. Monzeglio), funded for the 1987, with Bilateral Agreement of Cultural Exchanges, by the University of Rome, La Sapienza, and the University of S. Paolo (Brazil).

  Authors: Bonnes, M., Secchiaroli, G.

  Papers on: "Gli studi di rappresentazione dell'ambiente urbano all'interno del Progetto UNESCO-MAB sulla città di Roma".

  Authors: Bagnasco, C., Bonnes, M., Colantonio Venturelli, R., Lapadula, B.F.